FROM CHALLENGES TO OPPORTUNITIES

A Quality Framework for Future Health Service Planning

Prepared for:
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Minister of Health

Submitted by:
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Board of Directors

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Executive Summary

Following the release of *Rural Physician and Health Services Review – Assiniboine Region*, Manitoba's Minister of Health requested the Assiniboine Regional Health Authority (ARHA) develop a planning framework that would facilitate appropriate response to the current and future health needs of the region. The ARHA undertook extensive staff and public consultation, analyzed data from the region's 20 health centres, and reviewed reports and best practices to arrive at this report.

It is evident to many on the front lines of the health care system in the Assiniboine region that change is required. Health providers are finding it increasingly difficult to meet current health needs in all places and at all times in all of the region's 20 health centres. All stakeholders are concerned about service stability and its potential effects on quality of care and patient safety. The symptoms of the challenge include:

- health providers stretched thin across the Assiniboine region;
- onerous on-call schedules for physicians that can lead to burn out and ultimately high turnover;
- underutilization of costly health care resources, e.g., empty beds, low patient volumes;
- periodic closure of acute care and emergency departments; and
- aging infrastructure.

These and other challenges affect the quality, accessibility and ultimately the stability and sustainability of health service delivery in the Assiniboine region. In order to address them, change will be required. But what form of change? This is the question that the following report seeks to address within a future planning and decision-making context.

The Scope of the Challenge

Our health providers work in a system largely designed in the 1950s for the needs of the 1950s. Then, hospitalization was common for conditions and procedures that are now more effectively treated with advanced, less invasive treatments and/or modern pharmaceuticals in a non-acute setting. Overall, improving population health and preventative care has also changed how, when and why we access health services today. In short, our population is healthier today, requiring fewer acute care beds.

The demographic profile of the Assiniboine region has also changed dramatically since the 1950s. In the last five years alone, the Assiniboine region has experienced a population decline of more than 3.5 per cent, whereas Manitoba's population as a whole grew by more than 1.5 per cent during the same period. While the Assiniboine region has a higher percentage of elderly people than many other areas of the province, population demographic projections suggest there will be minimal change to the population base over the age of 65 and potentially a significant decline the population base over the age of 75 in the region. A recent report indicated that while seniors tend to use more health care resources, many of the hospital days used by this population do not, in fact, require acute care resources.

Current levels of activity at many acute care sites can only support minimum staffing levels. In such a context, staff availability issues, e.g., absences, can lead to suspension of services at facilities. In fact, the ARHA is forced to close emergency departments at times because sufficient provider support (doctors, nurses, diagnostic staff or other health workers) cannot be assured. Moreover, facilities with service levels that can only justify minimum staffing levels cannot provide physicians and other health workers

with the opportunity to adequately maintain and enhance their skills. These staffing issues directly affect quality of care and can even, potentially, put patient safety at risk.

Despite these realities, we continue to try and maintain acute care beds that are no longer used. These are significant resources that could be better used elsewhere, enhancing existing programs and offering new programs. When asked, Assiniboine residents identified access to primary care as one of their top priorities. The current situation does not fully support that need.

During public meetings held in the spring of 2004, one thing was made clear: our health delivery system needs to change in order to be more responsive to contemporary needs of residents. However, what kinds of changes are appropriate? There are a number of possible answers to this question. Some might argue that more money is all that is required. This perspective neglects the real fact of diminishing returns for the money that is currently being spent. Others might argue that, given the relatively small population of the region and its proximity to major urban centers, the Assiniboine region should rely more heavily on other regions' resources, i.e., take advantage of economies of scale. This perspective neglects the continued need, voiced by all residents, for health services to be located as close to home as possible. The real questions are what kinds of services should be located locally and what kinds of services would be provided better on a regional or sub-regional basis?

Health Planning for the Future

Often, decisions to alter health care delivery in rural settings have been perceived as a choice between centralizing or dispersing the delivery of services. In today's world, a middle approach is possible, one that achieves a critical mass of services necessary for a stable and effective system *and* improves greater local access to essential health services. The following planning framework outlines criteria and indicators that can help guide future decision-making in the Assiniboine Regional Health Authority. Emphasis will be placed on moving towards stronger acute care centres, supported by enhanced primary care services.

The proposed criteria and indicators will be used to inform decisions that strengthen "critical mass" acute care centres within a sub-regional context. A principal goal will be to ensure that the majority of each sub-region's catchment population would be within 30 minutes travel time of acute care/emergency department services. In **Map 1**, fifty kilometre radiuses have been drawn around all existing acute care centres in the Assiniboine region. The significant overlap demonstrates that currently the majority of Assiniboine region residents have such access to multiple sites.

In developing the criteria/indicators that follow, the ARHA has been informed by the voices of residents, staff and other health stakeholders. The ARHA has placed patient safety and quality of care at the forefront of its decision-making process. The criteria for decision-making have been subjected to a great deal of scrutiny and analysis.

All acute facilities examined in this report will remain open offering various levels of acute care including physician and clinical services, primary health and community care and personal care home services. Many facilities will see their capacity enhanced. However, there will be changes in acute care service levels at some facilities. Frankly, it is impractical to expect all facilities in the region to maintain their acute and emergency departments indefinitely. Using this framework as appropriate opportunities and needs arise will assist with the meaningful re-allocation of resources.

The ARHA is confident that this framework, over time, will lead to better, more efficient use of resources. Quality of care will be strengthened on a regional basis and ultimately bring stability to the system, ensuring future sustainability.

Introduction

In the fall of 2003, at the Minister of Health's request, the Office of Rural and Northern Health undertook a review of the health service delivery in the Assiniboine region and other rural areas. The review was intended to gain a better understanding of the serious challenges facing health service delivery in the region and to offer suggestions for improvement. It involved extensive public consultation with community members and physicians. The *Rural Physician and Health Services Review – Assiniboine Region*, released in April of 2004, concluded that, "change will occur and is necessary." In doing so, the report reinforced and confirmed the reality of what many on the ground already knew; namely, that the status quo cannot be preserved and that bringing stability to the system and ensuring future sustainability will require change.

The minister subsequently asked the Assiniboine Regional Health Authority (ARHA) to respond with the ultimate goal of improving the stability and sustainability of health services over time.

Planning Process

The ARHA board of directors sought input from residents and health providers throughout the region in the form of 14 invitational, multi-community engagement meetings held in June 2004. Subsequently, the results of these meetings were shared at open public forums held in Souris and Shoal Lake on August 30 and 31, 2004 respectively (for a complete summary of stakeholder inputs, see **Appendix A**). The board of directors also relied on the best possible clinical data and regional information available (acute care utilization data, expert reports, best practice literature) in developing the framework outlined in this report.

A steering committee comprised of ARHA board members, senior ARHA staff and Manitoba Health representatives established the following **guiding principles** for this process, including:

- quality of care and patient safety is the overarching principle;
- access and continuity of services is essential;
- accountability and efficient resource management are essential components in enhancing services and achieving sustainability;
- decisions must be evidence-based with an eye on best practices;
- change can be achieved through innovation and flexibility;
- adhering to primary health care principles as articulated by the ARHA and Manitoba Health; and
- partnerships and open communication will go a long way toward achieving positive outcomes.

In responding to the minister's request and in listening to stakeholders across the region, the ARHA chose to establish criteria and indicators that will help guide evidence-based decision-making, help ensure future stability and sustainability, while maintaining access to quality care and continuity of service. These criteria and indicators were further shared, prior to finalizing the report, with the region's District Health and Provider Advisory Councils; at 25 general staff meetings; and at eight key community stakeholder meetings across the region.

The ARHA was asked to come up with measures to strengthen health delivery *on a regional basis*, rather than a community-by-community approach. A regional strategy was seen as the best method of sustaining rural health care delivery and avoiding service migration to urban centers.

Structure of the Report

Challenges: An Environmental Scan presents an analysis of the challenges facing health service delivery in the Assiniboine region. It is based on clinical data from the region's health centers, Manitoba Health, research reports conducted by agencies such as the Manitoba Centre for Health Policy and best practice literature.

Health Planning for the Future contains a detailed analysis of the criteria and indicators that will guide future decision-making.

Challenges: An Environmental Scan

The Assiniboine region faces numerous critical challenges that require attention if the health delivery system is to become stable and sustainable. In particular, five factors are key contributors to the present challenges. They include:

- demographic changes;
- use of acute care facilities;
- human resource availability and stability;
- age of capital infrastructure; and
- supply and demand for personal care home services.

Demographic Change

The Assiniboine region has a declining population, a result of changes in the rural economy and demographic trends. Its in-region population was 69,852 in 2003, a 3.54 per cent decrease since 1998 (Manitoba Health Population Report, June 2003). Manitoba, as a whole, experienced an overall population increase of 1.52 per cent during the same period.

The Assiniboine region has a higher percentage of elderly residents than many other areas of the province; those aged 65 years and over represent almost 20 per cent of the region's population (2003). The future demographic profile of the region is illustrated in **Table 1**.

Overall, things remain relatively static; slightly aging, but not to the extent expected for the province as a whole. In fact, a 13 per cent decline is expected for the 75+ age group in the Assiniboine region over the next 15 years (Stewart *et al.*, MCHP, 2002).

Population figures in Table 1 likely under-represent First Nations population within the Assiniboine Regional Health Authority.

Table 1: Demographic Projections to 2025

Age Group	Projected Change ARHA North	Projected Change ARHA South	Projected Change Manitoba
0 to 14	-6.6%	0.0%	-17.4%
15 to 64	+0.5%	+0.7%	-4.1%
Over 65	+5.0%	-2.0%	+46.9%

Source: Manitoba Bureau of Statistics, 2003

These demographic trends have clear implications for health care service delivery. For example, a recent report found that seniors in Manitoba accounted for two-thirds of all hospital days and contributed nearly two-thirds to inpatient costs. More importantly, many of these hospital days did not require care in acute care hospitals. In many cases, some form of alternative clinical or personal care home setting would have been more appropriate (Menec *et al.*, MCHP, 2002).

Utilization of Acute Care Services

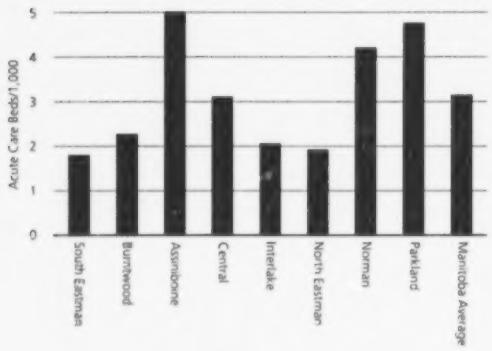
The ARHA has 348 acute care beds spread across 20 health centres, a ratio of 4.98 beds per 1,000 people. This is the highest ratio of all rural and northern regional health authorities in the province; the provincial average is three beds per 1,000. See **Figure 1**.

The reported average acute care bed occupancy rate for the region is around 55 per cent over the last five years. In other words, at any given time almost half of the acute care beds in the Assiniboine region are empty. This trend is projected to continue since hospital bed needs are projected to decline over the next 20 years (Stewart *et al.*, MCHP, 2002).

From a population health perspective, declining utilization of hospital beds is not a bad thing;

indeed, it means that people today are hospitalized less than they were in the past because better standards of care have resulted in less illness and preventable death. However, from a health service delivery standpoint, declining use of hospital beds is problematic. It is an inefficient use of valuable resources at a time when many of the services traditionally provided in hospitals are now safely and appropriately performed in physician clinics or other alternate settings.

Figure 1: Acute Care Bed Ratio per 1,000 residents, by RHA, 2003



True acute care utilization in the Assiniboine region is in fact lower than the reported 55 per cent since a significant amount of current acute care days are actually long-term care residents waiting for placement in a personal care home. The Assiniboine region data is indicative of a more general trend in Manitoba. A recent report concluded that "...people who do not need hospital care are occupying acute care inpatient beds in Manitoba." According to the authors of the report, "...[only] changes in practice and/or policy have the potential to change or reduce this pattern of inappropriate hospital use" (Stewart *et al.*, MCHP, 2002).

In addition to acute care bed utilization, the number of acute care patients per day is an important evaluative criterion. For the Assiniboine region's 20 health centres, the average is eight acute care patients per day, ranging from a low of two to a high of 19. Ten sites average six or less acute care patients per day. See **Appendix B.**

The average number of visits to outpatient departments in the region is also relatively low, ranging from an average of three per day at two sites to 20 per day at two sites. Only four sites have an average of more than 10 outpatient visits per day. Furthermore, many outpatient visits are scheduled (e.g., casting, removal of stitches, etc.), which do not require an emergency room setting in order to be performed. On average, 35 per cent of the region's total outpatient visits are scheduled; at some sites it is closer to 50 per cent. The number of outpatient visits in the region actually requiring true emergency care services comprise less than 12 per cent of total outpatient activity. Only three sites average more than two outpatient visits per day that require resuscitative, urgent or emergent care. See **Appendix B.**

One of the negative effects of low patient volumes is that it impedes the development of a critical mass to support programs, services and staff. Low patient volumes can only justify minimum staffing levels and can prevent existing staff from maintaining and improving their skills. As a result, staffing levels in some facilities are such that one unexpected vacancy or the inability to recruit jeopardizes service delivery and necessitates suspension of services. This has resulted in significant instability in service delivery in the Assiniboine region over the past several years.

Human Resource Challenges

The *Rural Physician and Health Services Review* identified physician recruitment and retention as a constant challenge in the Assiniboine region, despite the success of recent efforts to fill vacancies. Indeed, changes to the regulations in Manitoba respecting conditional licensure for international medical graduates *have* positively affected the region's ability to recruit. And, in fact, during the last decade, the region's recruitment efforts have more or less kept pace with departures. The problem, however, is retention, which manifests itself as high turnover rates. Turnover of this kind creates unnecessary instability in the provision of physician services. In addition, it means the enormous time and money

spent on recruitment cannot be utilized elsewhere.

The need to provide 24/7 hospital service in this context of physician turnover means less than ideal on-call ratios for physicians and other health providers. Today's providers, for the most part, have expressed strong opinions about current on-call schedules that negatively impact quality of family life and their ability to engage in appropriate professional development.

> *"It is considered unacceptable by The College of Physicians and Surgeons of Manitoba for a physician to be on call "all the time" or otherwise so frequently that there is a risk that chronic fatigue may impair the judgment, decision or procedural skills of the physician."* – The College of Physicians and Surgeons of Manitoba, *Guideline No. 1622*

The Assiniboine region has seven physician on-call rotations of one-in-three or less. In effect this means that some facilities—or combination of facilities—have three or fewer doctors available to provide twenty-four hour service. At times, there is one doctor on-call for a twenty-four hour period covering more than one facility. Ultimately, this is unsustainable. In such a scenario, one vacancy will create a crisis and lead to temporary service disruptions. Meanwhile, the resultant physician fatigue and ultimate departure creates a vicious circle of departure and recruitment. The College of Physicians and Surgeons of Manitoba has expressed grave concerns on this issue and the potential compromise to patient safety that it represents.

The region faces other human resource challenges, including:

- **Nurses.** Like other regions, the Assiniboine region faces a "retirement bubble" among its Registered Nurses and Licensed Practical Nurses in 2006-07. A Registered Nurse Projection Model forecasts a shortage of nurses for the rural south, including the Assiniboine region, in the order of 200 over the next few years. In addition, the region has experienced difficulties filling full-time nursing positions for specific sites in the past. As well, the lack of casual pools in the region has made it difficult at times to find replacements for vacations or unexpected leaves of absence. In the context of health centres characterized by low acute care bed utilization and low patient volumes (and thus minimum staffing levels), such a scenario creates a recurring crisis situation.
- **Diagnostic staff.** Diagnostic staff in the Assiniboine region average 51 years of age. Consequently, by the year 2006-07, the Assiniboine region is expected to have the highest percentage of eligible retirements of diagnostic services professionals in the province. Since the region relies on cross-trained staff in both lab and x-ray in order to cost-effectively access this service, the scarcity of cross-training programs in past years has resulted in an insufficient supply to meet current and future demands. Recent provincial changes are improving the situation, but will likely not eliminate the challenge.

Capital Infrastructure

> *"Hospitals pose many challenges to those undertaking reform of health care systems. They are, quite literally, immovable structures whose design was set in concrete, usually many years previously. Their configuration often reflects the practice of health care and the patient population of a bygone era."* – McKee and Healy (2000)

The region's capital infrastructure, like the population it serves, is aging. Many of the region's acute care facilities were built during the 1950s,

at a time when the health care needs of the population were very different than they are today. Of the 20 existing facilities, nine were built prior to 1960, many are in poor condition and have reached the end of their expected life. Others will require significant capital investments. Given current service levels in parts of the region, choices have to be made. Specifically, a regional Capital Management Plan that allows "form to follow function" is required.

Personal Care Homes

Personal care homes (PCHs) within the Assiniboine region, with few exceptions, consistently operate at above 95 per cent occupancy. There were 907 PCH beds in the Assiniboine region in 2003. This means an average of 125 beds per 1,000 people over the age of 75; the provincial average is 122. The Assiniboine region, like many other regions in the province, still provides significant (approximately 200) Level I and II care in personal care homes at a time when this level of care is better delivered with appropriate supports in the home, e.g., home care or in seniors homes. In addition, the Assiniboine region is unique in that it still operates some Level I and II only personal care home beds. If these anomalous Level I and II beds are omitted, the true personal care home bed to population ratio in the Assiniboine region is more accurately stated as 110 beds per 1,000 population over the age of 75 (Martens *et al.*, MCHP, 2003).

Forecasted demand for personal care homes in the Assiniboine region is expected to decline over the next 20 years because of an anticipated 13 per cent decline in the 75+ population during the same period. A decline in PCH bed requirements in the order of 20 per cent is predicted. This means a bed to population ratio of only 109 will be required in the year 2020, as illustrated in **Table 2**. Again, these numbers have not been adjusted for Level I and Level II care. When they are, the surplus is in fact greater.

Table 2: Future Personal Care Home Requirements

Change in Population Age 75+ (1998-2020)	- 13%
Existing Personal Care Home Beds	907
Projected Personal Care Home Beds Required in 2020	719
Projected Surplus Personal Care Home Beds	188
Projected Bed to Population over 75 years of age Ratio	109

Source: Manitoba Center for Health Policy, *Estimating Personal Care Home Bed Requirements*, December 2002

Summary

Health providers in the Assiniboine Regional Health Authority work hard to provide quality care. They do so in a system that was largely developed in the 1950s for the needs of the 1950s.

Changes in demographics, as well as health services, have altered the ways and types of services that residents require. However, the health care delivery system has not changed significantly around it.

As a result, currently, health care service delivery in the Assiniboine region is characterized by instability. Health providers are challenged on a daily basis to provide quality care and to ensure patient safety. They can no longer assure system stability or sustainability. In this context, neither community needs nor the needs of the system as a whole are being met.

Clearly, change is required if the system is to become stable and sustainable. And while changes are difficult, they also bring opportunities. In particular, there are opportunities to strengthen elements of the system so that it will more suitably meet the needs of residents. The Assiniboine Regional Health Authority is committed to making the most of these opportunities in the context of an overall regional strategy.

Health Planning for the Future

The ARHA was requested to develop a process for making decisions that is evidence-based and that will facilitate the eventual reallocation of resources towards new or enhanced services that better meet today's population needs. The framework will support strengthening capacity in designated acute care centres while continuing to pursue excellence in local and community-based primary care initiatives, thus strengthening the ability of the regional system as a whole to deliver quality care. The criteria and indicators that follow are evidence-based. They are rooted in a rigorous evaluation of available clinical data and additional qualitative factors, e.g., proximity.

What follows is an outline of decision-making criteria and indicators that will be used to evaluate and make future decisions about acute care and emergency department services on a regional basis. Such decisions will enable potential investments in new services and/or the enhancement of existing services, in accordance with local needs and within an overall regional strategy, to provide improved support to acute care facilities.

Planning Framework Overview

Often health administrators have perceived the delivery of health care in a rural setting as a choice between centralizing or decentralizing services. A recent World Health Organization report states that:

> "The configuration of hospital services in a given setting reflects a tension between two competing objectives: centralization versus dispersion of hospital services. First, hospitals and clinicians undertaking high volumes of work achieve better outcomes, and second, large hospitals achieve economies of scale. The counter argument for dispersing hospitals is that this improves population access and reduces inequalities." (McKee and Healy, 2000)

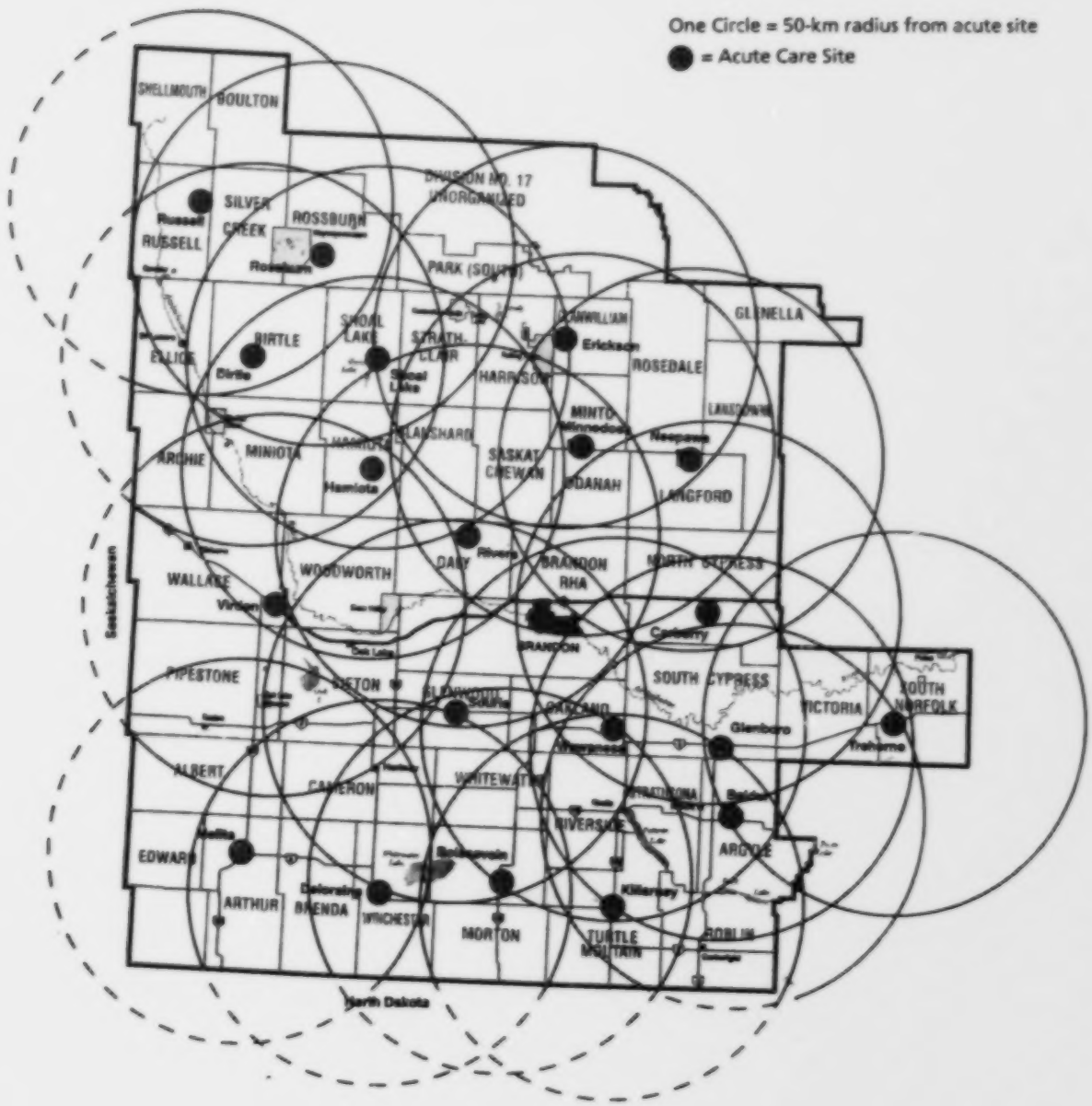
However, there is no reason to think that these are the only two choices available. In this day and age, with the range of technology available, a "middle ground" between centralization and decentralizing is an achievable vision. Indeed, we believe it is possible to achieve a critical mass of services *and* improve local population access to essential clinical services within a sub-regional or regional basis, provided appropriate supports are in the system. Achieving this vision requires criteria upon which to base decisions; the framework that follows can help guide those decisions. At the same time, ensuring stability and sustainability ultimately requires sharing of resources between communities to ensure ongoing reasonable access to the full continuum of health services in the region.

Ensuring stability and sustainability ultimately requires sharing of resources between communities to ensure ongoing reasonable access to the full continuum of health services in the region.

The current landscape in the Assiniboine region is an example of decentralization, the product of the 1950s. As illustrated in **Map 1**, there is considerable overlap of acute care services within the region. The circles represent 50-kilometre radiuses, or approximate 30-minute travel times to acute care/emergency department services (distances do vary when examining roads actually travelled). In most instances, residents currently have more than one option relative to accessing acute care within a 50-kilometre radius.

Catchment population data is a key factor to be considered when making decisions that will

Acute Care Coverage – Assiniboine Region



support and sustain "critical mass" acute care centres. Manitoba Health Population Reports by RHA and Municipality as of June 1, 2003, Indian and Northern Affairs Canada – First Nations Population as of January 1, 2004, and Tables 19A – Inpatient Cases and Days by Municipality and Hospital were reviewed to determine what the evidence shows regarding population and where residents access acute care. The 2002-2003 Tables 19A were used as 2003-2004 data would not have been an accurate reflection of activity due to numerous service disruptions during the 2003-2004 year.

Planning Summary

- **All acute facilities examined in this report will remain open** offering various levels of acute care including physician and clinical services, primary health and community care and personal care home services.
- Facilities currently offering acute and emergency department services will have added capacity to support the overall needs of the region, supported by an expanded and enhanced emergency medical response system.
- Facilities currently providing alternate levels of care such as transitional or personal care home services will also remain open. Transitional care is care that allows for patients to recover from acute care treatment or illness closer to home. This model has already been implemented with great success at the Reston Health Centre.
- The introduction of enhanced and new services that better meet people's needs will require changes in levels of care provided at some facilities.

Planning Criteria and Indicators

Despite best efforts on multiple fronts, both internal and external factors will result in the need for change if a full continuum of healthcare services is to be a sustainable option in many rural areas. Decisions will need to be made to support the future stability and sustainability of quality health care in the Assiniboine region. The current distribution of existing resources will need to be altered.

The ARHA heard that stakeholders recognize the need for eventual change; that they want a plan; that they want the ARHA to be thorough when developing the plan; and that they do not support unnecessary destabilization of services. In response, the ARHA has likewise acknowledged the need for eventual change; has set the basis for planning through a rigorous and thorough consultation and review process; and will move to implement needed change when required to support sub-regional/regional quality, stability and sustainability. At times, short-term destabilization in some areas may be required to support the goal of longer-term stability and sustainability on a sub-regional/regional basis.

Needed change should be based on consideration of clinical data involving three principal evaluative criteria: *quality*, *accessibility* and *affordability* (in that order). These criteria are derived from best practice literature, in particular, the Ontario Health Services Restructuring Commission's report, *Looking Back, Looking Forward* (March 2000). The following section explains the critical concepts involved in each criteria.

Quality

Quality of care is defined principally in terms of *critical mass* and *clinical coherence*.

Critical mass refers to patient volumes necessary to maintain critical clinical skills, i.e., volume-dependent clinical competencies, at a given site. Medical evidence, as well as common sense, indicates that patients are likely to have better health outcomes when they receive care from providers who have lots of experience with a particular procedure than with ones who have little experience.

Clinical coherence refers to having skills and services located in close proximity to each other in

order to minimize time and transportation and, therefore, maximize the potential for positive health outcomes. In short, a higher quality of care can be expected if a patient can receive most services in one location in a relatively short period of time.

Additional quality factors include quality of worklife issues for health providers, e.g., on-call ratios, which as we have seen can affect the stability of health service delivery in a given site.

Accessibility

Accessibility is defined as the ability to maintain and, where possible, enhance people's access to quality facility-based and community-based services.

Evaluation of accessibility involves examining service utilization rates and local health needs. Distance from acute care services is an important qualitative factor in making decisions.

Affordability

Affordability refers to the ability to provide acute care and emergency department services efficiently and effectively and that the highest proportion of funds possible is spent on direct patient care.

Every factor needs to be considered in terms of its contribution to clinical efficiency, including the number of beds, clinical and diagnostic services, and health providers. In short, the system will be evaluated in terms of how resources can be best distributed to ensure quality, accessibility and long-term stability.

Evaluative Criteria and Indicators

Each health facility with acute care/emergency department services can be evaluated in terms of the above criteria and established indicators outlined below.

Quality Indicators

Assessing *critical mass* and *clinical coherence* involves analysing the following clinical data:

- *Population Served:* Manitoba Health data provides evidence of where residents currently go to access acute care inpatient services. The larger the population served, the greater the potential for achieving a critical mass to support quality service delivery.
- *Acute Care Admissions:* Studies show that acute care facilities with less than 300 acute care admissions per year risk maintaining volume-dependent clinical competencies (Marquette Regional Health Authority, *Acute Care Utilization Review Analytical Report*, 2001). The more admissions an acute care facility has, the greater the likelihood of maintaining volume dependent clinical competencies.
- *Average Number of Acute Inpatients per Day:* The total number of inpatients per day does not necessarily reflect "acute" inpatients since a certain percentage of hospital inpatients do not actually require acute care. This indicator looks at the average number of actual acute inpatients per day per site. The larger the number of acute inpatients the greater the likelihood of volumes to support clinical skill sets in this area.
- *Surgical Volumes:* The larger the surgical volumes performed, the greater the likelihood of ensuring a critical mass to support needed skills in this speciality area.
- *Obstetrical Volumes:* The College of Physicians and Surgeons of Manitoba Guideline Number 1680 recommends that sites providing intrapartum care should perform 25 or more deliveries per year and should have capacity to perform Caesarean section or have this service available within 30 minutes from the determination of the need to do so. This is only applicable to three sites in the region.
- *Oncology Visits:* Sites with approved Community Cancer Programs will be evalu-

ated in terms of the number of visits they have. The higher the number of visits, the greater the likelihood of maintaining the critical skills needed to safely offer this service.

- *Outpatient Volumes:* This examines the average number of outpatient visits requiring emergency care (Level 1 – Resuscitation, Level 2 – Emergent, Level 3 – Urgent). Again, higher outpatient volumes mean a greater likelihood of maintaining competencies.
- *Speciality Programs:* Clinical coherence is improved by co-locating most speciality programs with acute care and emergency department services.
- *Air Ambulance Access:* Access to Lifeflight, e.g., an airstrip, and past usage will be considered.
- *Physician On-call Rotations:* Although a few physicians will work in a 1:2 on-call rotation, physicians have voiced that this is neither safe nor sustainable over the long term. Less weight should be afforded to larger on-call rotations that are the result of a shared on-call arrangement.
- *Diagnostic Staff On-call Rotations:* Acceptable on-call schedules for diagnostic staff is also important. Higher quality potential is likely in sites with larger on-call schedules.

Summary – Quality Indicators

Quality criteria can be weighted and evaluated to show evidence of sites that have the most potential to achieve a quality threshold of the above indicators (See **Appendix C**). The concept of a quality threshold needs to be understood in the current context and the guiding principle of quality of care. If we were to apply scores based on the information we have today (for illustrative purposes only) it would result in positioning of the region's 20 sites in terms of a quality threshold as outlined in **Table 3**. Those sites falling in the "higher" category in terms of the population currently being served, current volumes and acuity of services, etc., are probably best positioned to support quality service delivery. Those in the "lower" category have lower scores which could indicate that quality of care may be compromised, not because of any direct intention or fault, but because of a lack of a critical mass of services or other factors such as physician availability.

Using the tool will help to identify those sites that have the most potential to achieve a quality threshold based on the above criteria and indicators. The evidence supports that the volume and acuity of services out of these sites is higher, and therefore, future decisions will support the need to prioritize the quality, stability and sustainability of acute care services at these sites.

Table 3: Acute Care Site Quality Indicator Scoring Summary

Site	Quality Threshold
A	
B	
C	
D	**Higher**
E	
F	
G	
H	
I	
J	
K	**Medium**
L	
M	
N	
O	
P	
Q	**Lower**
R	
S	
T	

It needs to be noted that these are not the only factors that will be examined in making future service delivery decisions and that accessibility and affordability considerations (as outlined later) will also be taken into account. For example, there may be sites which do not score the highest from a quality indicator perspective but that should be maintained in order to ensure reasonable accessibility targets can be met. This would require ongoing evaluation of needs relative to ensuring quality service in circumstances where critical mass from a volume perspective may be difficult to achieve.

Accessibility Indicators

The region recognizes that the above criteria are not the only indicators that need to be examined when making decisions. Accessibility factors were also identified by stakeholders as important.

Accessibility indicators include proximity to an acute care site, special population needs of the region (e.g., First Nation populations, seasonal fluctuations), and the impact of things like location on major highway(s) and industrial accidents.

- *Proximity (driving distances):* A previous Manitoba report suggests that populations should be able to access acute care or emergency care within a one-hour drive from their home 90 per cent of the time. The ARHA would propose to raise that threshold to the majority of Assiniboine region residents having access within 30 minutes (or approximately 50 kilometres) with the goal that 90 per cent of residents should be able to achieve such access within three-quarters of an hour (or approximately 75 kilometres).

- *Frequent First Nation Service:* First Nation communities tend to access acute care and emergency department services more frequently than the general population. Consequently, additional weight should be given to those sites that currently serve First Nation populations.

- *Seasonal Population Fluctuations:* Stakeholders asked the region to ensure consideration is given to any impact seasonal fluctuations in population may have on the need for and use of services and this will be considered. Examination of today's out-patient activity reveals that this is currently only a factor in two sites during the months of July and August. And even with that, one of the sites has the third lowest overall outpatient activity and the highest percentage of non-urgent/scheduled outpatient visits in the region.

- *Highway/Industrial Accidents:* Examination of motor vehicle accident data can provide information about the impact of highway proximity/location on the need for service. Current motor vehicle accident data in the region indicates that there is no statistically significant impact on activity for any particular site; almost as many motor vehicle accidents happen off-road as happen on major highways, and very few motor vehicle accidents result in the need for emergent transfer. Similarly, examination of Worker's Compensation Board (WCB) claims can provide information about the impact that major industry can have on the use of acute/emergency services. A review of today's information reveals that WCB claims have comprised on average only 1.2 per cent of all outpatient activity in the Assiniboine region since 2000-2001 and have not contributed significantly to activity at any specific site.

Affordability Indicators

Finally, affordability indicators also need to be considered as a part of the future decision making process and include two main criteria: i) best practices with respect to occupancy rates and; ii) the age of capital infrastructure.

- *Benchmark Occupancy:* best practice literature suggests optimal occupancy rates of 90 per cent for hospitals with 200-299 beds. However, smaller hospitals require smaller occupancy rates (Ontario Health Services Restructuring Commission Report, 2000). The ARHA will aim for a 75 per cent occupancy as its benchmark. Based on this bench-

mark occupancy and the region's true acute care use of beds, the region would require 209 acute care beds on a regional basis.

- *Capital Infrastructure:* Capital infrastructure also needs to be analyzed in terms of capacity to support the delivery of acute care and emergency department services.

Recommendation: That the above noted criteria be adopted as those that will inform future decision-making around the delivery of acute and emergency department services in the Assiniboine region.

Emergency Medical Services

The need for access to high quality emergency medical services (EMS) to support acute care/emergency services was a critical concern expressed by residents and will need to be considered as a key component to support any future plans.

The creation of benchmark targets for an EMS system is difficult given the lack of established provincial or national standards for rural practice. However, it is known that multiple variables contribute to successful outcomes, including response time, educational levels/skills of emergency staff and stability of service. An EMS plan needs to consider historical patterns, evaluation of response data and best practice information.

In particular, consideration should be given to the following factors in making decisions about emergency medical services:

- *Strategic Station Placement* – Stations with higher "staffed" components (e.g., full-time/part-time positions) strategically placed in core coverage areas will facilitate best response time performance.
- *Minimum Training Levels by Station* – The capabilities of personnel arriving on scene are as important as response time. Consideration will be given to minimum staffing levels to address response time targets, call volumes and the needs of specific types of units.
- *Financial Implications* – In Manitoba, EMS remains a non-insured/not-fully-funded service. Even with additional investments, user fees will likely remain. Changes to user fees as a means of promoting equity among users will be considered.
- *Standardized Inter-facility Transfer (IFT) Program* – Designated inter-facility transfer units help to achieve efficiencies within the system and enhance emergency coverage.
- *Integrated Service Potential* – Integration of EMS providers in the continuum of health service delivery is an important goal and a best practice in a system where response readiness results in excess capacity for personnel to accomplish other tasks or fulfil additional roles. This capacity should be used to meet unmet needs or further enhance service delivery across the continuum.
- *Seasonal Population Fluctuations* – Such fluctuations discussed previously will be considered.
- *Human Resources* – It is probable, that at least in the short-term, a casual workforce will continue to be required to support the EMS system and all stations will continue to rely on some degree of casual support. Quality of worklife for providers (e.g., on-call requirements) also needs to be considered.
- *Educational Supports* – Initial and ongoing educational supports to ensure quality service delivery will be important.
- *Response Time Targets* – The EMS system should be designed based on the wide range of patient needs as well as the ability to respond with timely, quality care to those patient needs. The Saskatchewan EMS Development Project (2000) indicates that a time interval supported by the literature is based on the outcome of trauma patients and that trauma patients "...survivability depends upon reaching 'definitive care' within one hour from the time of the injury." Definitive care can be defined as Advanced Life Support

(ALS) which, at minimum, requires a trained Paramedic 2 ambulance attendant. Future decisions will support response time intentions that align with the provincial emergency medical services strategy. The 2003 provincial database indicates that the Assiniboine RHA EMS system provides a current response time of 28 minutes 90 per cent of the time, with an overall average response of 13 minutes. Professional staff could provide advanced life support in an ambulance or in a designated emergency department.

Alternate Levels of Care – New Best Practices

Recent literature on acute care practices indicates that current health delivery models in rural areas do not always constitute best practices. According to one report:

> *...current hospital use need not be considered 'best practice' and should not necessarily be used as a model for projecting future needs...a best practice model assumes that capacity is available in alternative settings including personal care homes, home care and rehabilitation facilities* – Stewart et al., MCHP, (2002).

Similarly, another report concludes that "...such a high level of non-acute care is provided at many hospitals, particularly rural institutions, that reconfiguring a number of acute care hospitals to alternative uses should be considered" (De Coster *et al.*, MCHP, 1996).

One form of a new best practice is so-called transitional care, which refers to services provided on an inpatient basis (e.g., admission required) where constant medical supervision is not required. Examples include: waiting for placement in a long-term care facility; some palliative care; convalescent care; and respite care. This form of care is particularly appropriate for the changing needs of an aging population.

An example of a successful transitional care facility is the Reston Health Centre, which offers palliative care, respite care and transitional care for residents waiting personal care home placement. Reston is an example of the region's ability and commitment to providing essential services as close to home as possible.

Opportunities for New and Enhanced Services

As the regional health authority moves forward, there is a continued obligation to address needs through new and enhanced services where appropriate. Opportunities can be created that will facilitate investment in new, or enhancement of existing services to better meet the needs of the population.

> *New and enhanced services that will benefit the overall health of residents should be an integral component of any regional planning process.*

Opportunities to improve health status and health service delivery include the areas of primary health care, chronic disease prevention, aboriginal health, enhanced surgical service capacity, palliative care, rehabilitation services, diagnostic services, and an enhanced, more equitable, emergency medical services system.

Conclusion

The Assiniboine Regional Health Authority recognizes that the current challenges, if left unattended, will become compounded. Residents of the region also recognize that change is necessary. However, there is no consensus on what form of change is desirable. Patients and communities have questions. The Assiniboine Regional Health Authority will continue to work with health providers, residents and communities to answer all questions and ensure any proposed changes are well communicated and appropriately implemented. Our intention is for every community to play an important part in the future of health care in the region.

The evaluative and decision-making criteria and indicators established in this report are based on extensive analysis of existing utilization data and review of best practices. We also undertook extensive consultation with community residents, facility staff and stakeholders. The criteria and indicators are intended to inform a decision-making framework for rural hospitals. The focus is on quality care and patient safety; the goal is stable and sustainable health care. To that end, the region will continue to examine all ways and means of using resources differently, more rationally and more effectively.

The challenges faced by the region also provide a real opportunity to develop a system that delivers on quality, accessibility and sustainability. There is an opportunity to introduce enhanced and new services that better meet needs in the communities.

Communities and health care providers must be open to new approaches and new alliances. The Assiniboine Regional Health Authority will continue to partner and work collaboratively with communities and other regions to move from challenges to opportunities. The ultimate goal is a health care system that supports quality and is sustainable for rural Manitoba today, tomorrow and into the future.

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Appendix A – Stakeholder Input

Date	Communication
Sept. 15, 2003	Press release • Health Minister appoints Dr. David Cram to report on rural doctor recruitment and retention • Note: Following this announcement the Office of Rural and Northern Health was designated to oversee the process
Fall 2003/ Winter 2004	***Office of Rural and Northern Health (ORNH) Review Process*** ***Physician Process*** • Group discussions held with ARHA physicians • Focus group meetings with physicians held in Virden, Souris, Shoal Lake, Neepawa and Treherne • Anonymous questionnaire ***Community Process*** Invitations in all local newspapers, and Manitoba Health and ORNH website • 17 weekly papers, one monthly paper, one daily paper • Open public meetings held in: – Hartney – Killarney – Virden – Minnedosa – Glenboro – Russell
April 2004	Rural Physician and Health Services Review Report released • Available on Manitoba Health and ORNH website
April 16, 2004	ARHA press release • Rural Physician and Health Services Review released
April 16, 2004	Manitoba Health press release • Rural Physician and Health Services Review released by Provincial Government
May 6, 2004	Memo to Assiniboine RHA staff and Provider Advisory Council (PAC) re: staff engagement meetings • Five representatives from each facility (acute care, diagnostics, emergency medical services • All physicians
May 6, 2004	Invitations sent out to community stakeholders re: community engagement meetings • 73 municipal corporations • Seven First Nations communities • Three District Health Advisory Councils
June 3, 2004	• Health services provider engagement meeting in Pipestone – Virden, Reston, Elkhorn and Melita Health Centre staff • Community stakeholder meeting in Pipestone – RM of Archie, RM of Wallace, Village of Elkhorn, Town of Virden, RM of Pipestone, Village of Oak Lake, RM of Sifton, RM of Albert, RM of Edward, RM of Arthur, Town of Melita
June 4, 2004	• Health services provider engagement meeting in Cypress River – Wawanesa, Glenboro, Baldur and Treherne Health Centre staff • Community stakeholder meeting in Cypress River – RM of Oakland, Village of Wawanesa, RM of South Cypress, Town of Glenboro, RM of Victoria, RM of South Norfolk, Village of Treherne, RM of Strathcona, RM of Argyle

Date	Communication
June 14, 2004	• Health services provider engagement meeting in Foxwarren – Russell, Birtle and Rossburn Health Centre staff • Community stakeholder meeting in Foxwarren – RM of Shellmouth-Boulton, RM of Russell, Town of Russell, Village of Binscarth, RM of Silver Creek, Town of Rossburn, RM of Rossburn, RM of Ellice, Village of St. Lazare, Town of Birtle, RM of Birtle
June 15, 2004	• Health services provider engagement meeting in Basswood – Minnedosa, Erickson and Shoal Lake Health Centre staff • Community stakeholder meeting in Basswood – RM of Shoal Lake, Town of Shoal Lake, RM of Strathclair, RM of Park, RM of Harrison, RM of Clanwilliam, Town of Erickson, RM of Minto, Town of Minnedosa, RM of Saskatchewan, Village of Rapid City, RM of Odanah
June 16, 2004	• Health services provider engagement meeting in Kenton – Souris, Rivers, and Hamiota Health Centre staff • Community stakeholder meeting in Kenton – RM of Miniota, RM of Hamiota, Town of Hamiota, RM of Blanschard, Town of Rivers, RM of Daly, RM of Woodworth, RM of Glenwood, Town of Souris
June 18, 2004	• Health services provider engagement meeting in Brookdale – Neepawa and Carberry Health Centre staff • Community stakeholder meeting in Brookdale – RM of Rosedale, RM of Glenella, RM of Lansdowne, RM of Langford, Town of Neepawa, RM of North Cypress, Town of Carberry
June 21, 2004	• Health services provider engagement meeting in Minto – Boissevain, Killarney, Deloraine, Hartney and Cartwright Health Centre staff • Community stakeholder meeting in Minto – Town of Killarney, RM of Roblin, Village of Cartwright, RM of Cameron, Village of Hartney, RM of Whitewater, RM of Riverside, RM of Brenda, Village of Waskada, RM of Winchester, Town of Deloraine, RM of Morton, Town of Boissevain, RM of Turtle Mountain
June 25, 2004	Invitations to First Nation communities re: community engagement meetings • Seven First Nations communities • Two Metis foundations
August 18, 2004	Comprehensive report distributed • 73 municipal corporations, seven First Nation communities, 32 ARHA facilities, 24 physician clinics, ARHA Regional and Corporate Office, ARHA website
Aug. 16, 2004	Press release • ARHA plans public meetings
Aug. 16-30, 2004	Invitation to public meeting in all local newspapers
Aug. 30, 2004	Open public meeting held in Souris
Aug. 31, 2004	Open public meeting held in Shoal Lake
Sept. 3, 2004	Press release • ARHA holds public meetings
Sept. 27, 2004	Comprehensive report highlights done as an insert into ARHA public newspaper that is distributed to 33,000 households in Assiniboine
April 4–12, 2005	Shared draft contents of report at 25 general staff meetings across the region.
April 13–15, 22, 2005	Shared draft contents of report at eight key community stakeholder meetings across the region.
July 2005	Report delivered to Minister

Appendix B – Site Statistics

Site	Capital Infrastructure	Beds	Acute Care Population Served (2002-2003)	Admissions (2000-2003)	Average Acute Inpatients /Day (2000-2003)	Inpatient Surgery Days (2000-2004)	Same Day Surgery (2000-2004)(a)	Deliveries (2000-2004)	Oncology Visits (2003-2004)	Outpatient Visits (2001-2003)(b)	Physicians on Call	Diagnostics on Call	First Nations Served (2002-2003)	Air Ambulance (2000-2003)
A	1952	36	7,902	1,082	20	145	492	82	307	852	7	3		4
B	1991	27	6,616	765	16	156	340	51		634	6	3	477	
C	1990	25	8,481	748	14					521	5	4	324	14
D	1971	32	5,743	944	17				170	1,020	4	3	781	35
E	1950	20	3,261	447	10	10	49	11	168	393	5(d)	3	132	
F	1976	26	5,209	483	12					887	5	4		1
G	1976	30	4,154	458	11	7	196			386	3	3		0
H	1955	11	3,207	340	8					542	3	3		
I	1955	14	2,593	316	5					369	2	3	356	
J	2000	10	2,553	330	6					303	3(c)	2		
K	1955	14	2,692	364	8					250	4(S)	4(S)		3
L	1959	16	3,532	274	6					601	2(e)	3	1,247	
M	1989	9	2,822	252	6					318	2	2	660	2
N	1957	13	2,704	270	6					206	7(S)	3		
O	1976	12	2,182	254	5					361	4(S)	4(S)		
P	2000	12	1,816	286	7					235	3	2		1
Q	1950	14	1,365	102	4					146	5(S)	3(S)		
R	1955	11	1,734	147	3					156	5(S)	3(S)		
S	2000	6	1,671	157	4					241	5(S)	3(S)		
T	1982	10	1,780	231	4					217	2	2(f)	777	
TOTALS		348	72,016	12,253	8	318	172	144	645	8,638			4,754	60

(a) Includes Endoscopy and Ophthalmology
(b) Resuscitation, Emergent, Urgent
(c) J – Approved 2 IPC, 1 FFS. Actual 2 IPC, 1 FFS, 1 Salary
(d) E – Approved 4.5 Salary
(e) L – Approved 2 IPC, Actual 2.5 IPC
(f) T – Approved 2 positions, presently on call in I and P
(S) Shared on Call

Appendix B – Site Statistics

Site	Capital Infrastructure	Beds	Acute Care Population Served (2002-2003)	Admissions (2000-2003)	Average Acute Inpatients /Day (2000-2003)	Inpatient Surgery Days (2000-2004)	Same Day Surgery (2000-2004)[a]	Deliveries (2000-2004)	Oncology Visits (2003-2004)	Outpatient Visits (2001-2003)[b]	Physicians on Call	Diagnostics on Call	First Nations Served (2002-2003)	Air Ambulance (2000-2003)
A	1952	36	7,902	1,082	20	145	492	82	307	852	7	3		4
B	1991	27	6,616	765	16	156	340	51		634	6	3	477	
C	1990	25	8,481	748	14					521	5	4	324	14
D	1971	32	5,743	944	17				170	1,020	4	3	781	35
E	1950	20	3,261	447	10	10	49	11	168	393	5[d]	3	132	
F	1976	26	5,209	483	12					887	5	4		1
G	1976	30	4,154	458	11	7	196			386	3	3		0
H	1955	11	3,207	340	8					542	3	3		
I	1955	14	2,593	316	5					369	2	3	356	
J	2000	10	2,553	330	6					303	3[c]	2		
K	1955	14	2,692	364	8					250	4[S]	4[S]		3
L	1959	16	3,532	274	6					601	2[e]	3	1,247	
M	1989	9	2,822	252	6					318	2	2	660	2
N	1957	13	2,704	270	6					206	7[S]	3		
O	1976	12	2,182	254	5					361	4[S]	4[S]		
P	2000	12	1,816	286	7					235	3	2		1
Q	1950	14	1,365	102	4					146	5[S]	3[S]		
R	1955	11	1,734	147	3					156	5[S]	3[S]		
S	2000	6	1,671	157	4					241	5[S]	3[S]		
T	1982	10	1,780	231	4					217	2	2[f]	777	
TOTALS		348	72,016	12,253	8	318	172	144	645	8,638			4,754	60

(a) Includes Endoscopy and Ophthalmology

(b) Resuscitation, Emergent, Urgent

(c) J – Approved 2 IPC, 1 FFS. Actual 2 IPC, 1 FFS, 1 Salary

(d) E – Approved 4.5 Salary

(e) L – Approved 2 IPC, Actual 2.5 IPC

(f) T – Approved 2 positions, presently on call in I and P

(S) Shared on Call

Appendix C – Site Scoring Detail

	Notes	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
Acute Population	1	5	5	5	5	3	5	3	3	3	3	3	3	3	3	1	1	1	1	1	1
Admissions	2	5	5	5	5	3	3	3	3	3	3	3	1	1	1	1	1	1	1	1	1
Acute Inpatients/Day	3	3	3	3	3	3	3	3	2	2	2	2	2	2	2	2	2	1	1	1	1
Inpatient Surgery	4	3	3			1		1													
Same Day Cases[a]	5	3	3			1		2													
Deliveries	6	1	1																		
Oncology Visits	7	3			2	2															
Outpatient Visits[b]	8	3	3	3	3	2	3	2	3	2	2	1	3	2	1	2	1	1	1	1	1
Physicians on Call – Not Shared	9	5	5	5	3	5	5	3	3	1	3		1	1			3				1
Physicians on Call – Shared	10											2			3	2		3	3	3	
Diagnostic on Call – Not Shared	11	2	2	3	2	2	3	2	2	2	1		2	1	2		1				1
Diagnostic on Call – Shared	12											2				2		1	1	1	
First Nations	13		1	1	1	1				1			1	1							1
Air Ambulance	14	1		1	1		1	1				1		1			1				
TOTALS		34	31	26	25	23	23	20	16	14	14	14	13	12	12	10	10	8	8	8	7

(a) Includes endoscopy and ophthalmology

(b) Resuscitation, Emergent, Urgent

Notes:

(1)	Acute Population	5,000 or over = 5	2,500 – 4,999 = 3	Under 2,500 = 1
(2)	Admissions	500 or over = 5	300 – 499 = 3	Under 300 = 1
(3)	Acute IP per Day	10 or over = 3	5 – 9 = 2	Under 5 = 1
(4)	Inpatient Surgery	100 or over = 3	50 – 99 = 2	Under 50 = 1
(5)[a]	Same Day Cases	300 or over = 3	100 – 299 = 2	Under 100 = 1
(6)	Deliveries	25 or over = 1		
(7)	Oncology Visits	300 or over = 3	100 – 299 = 2	Under 100 = 1
(8)[b]	Outpatient Visits	500 or over = 3	300 – 499 = 2	Under 300 = 1
(9)	Physicians on Call Not Shared	5 or over = 5	3 or 4 = 3	Under 3 = 1
(10)	Physicians on Call Shared	5 or over = 3	3 or 4 = 2	Under 3 = 1
(11)	Diagnostics on Call Not Shared	4 or over = 3	3 = 2	2 = 1
(12)	Diagnostics on Call Shared	4 or over = 2	3 = 1	
(13)	Service to First Nation Community	Yes = 1		
(14)	Air Ambulance Capacity	Yes = 1		

(5)[a] Includes Endoscopy and Ophthalmology

(8)[b] Resuscitation, Emergent, and Urgent

Other Factors Considered:

Seasonal fluctuations in population and impact on activity (inpatient/outpatient)

Location of major industries and impact on activity (WCB Claims)

Major highways and impact on activity (MVAs)

Notes

Notes

Notes